

Figure 3.--Water-level changes in wells in the upper sand unit of the Chicot aquifer, spring 1983 to spring 1985.

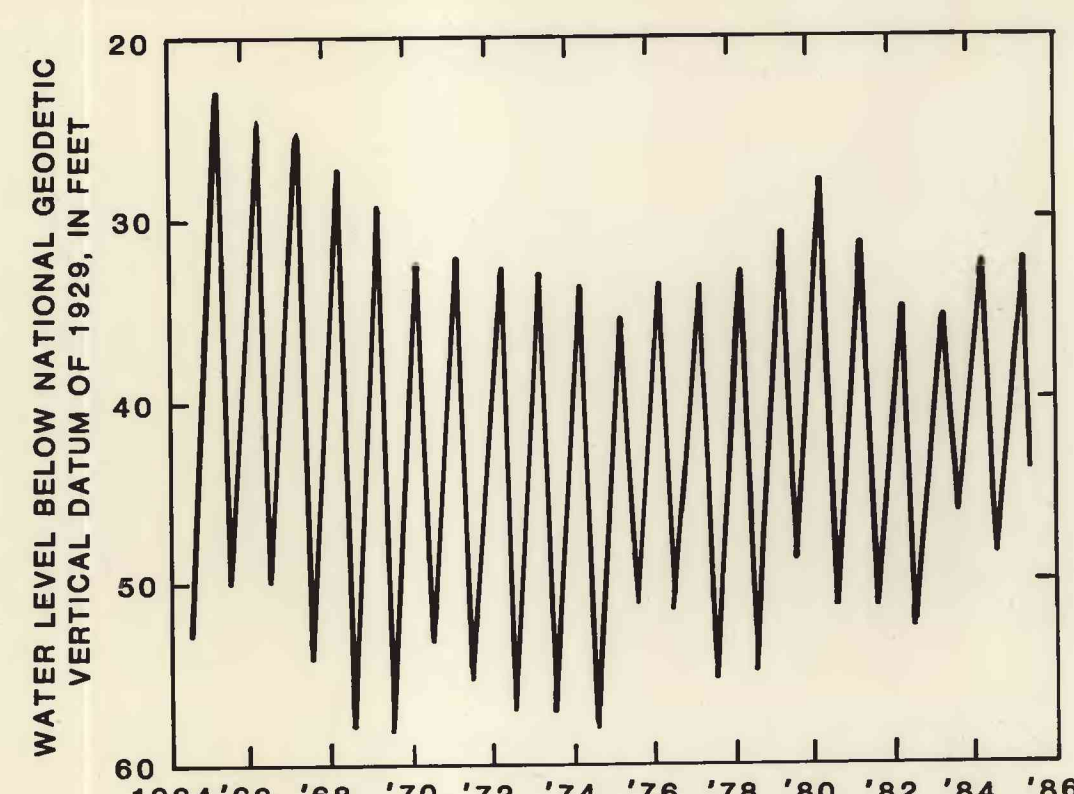


Figure 4.--Hydrograph of well Ac-326 completed in the upper sand unit of the Chicot aquifer.

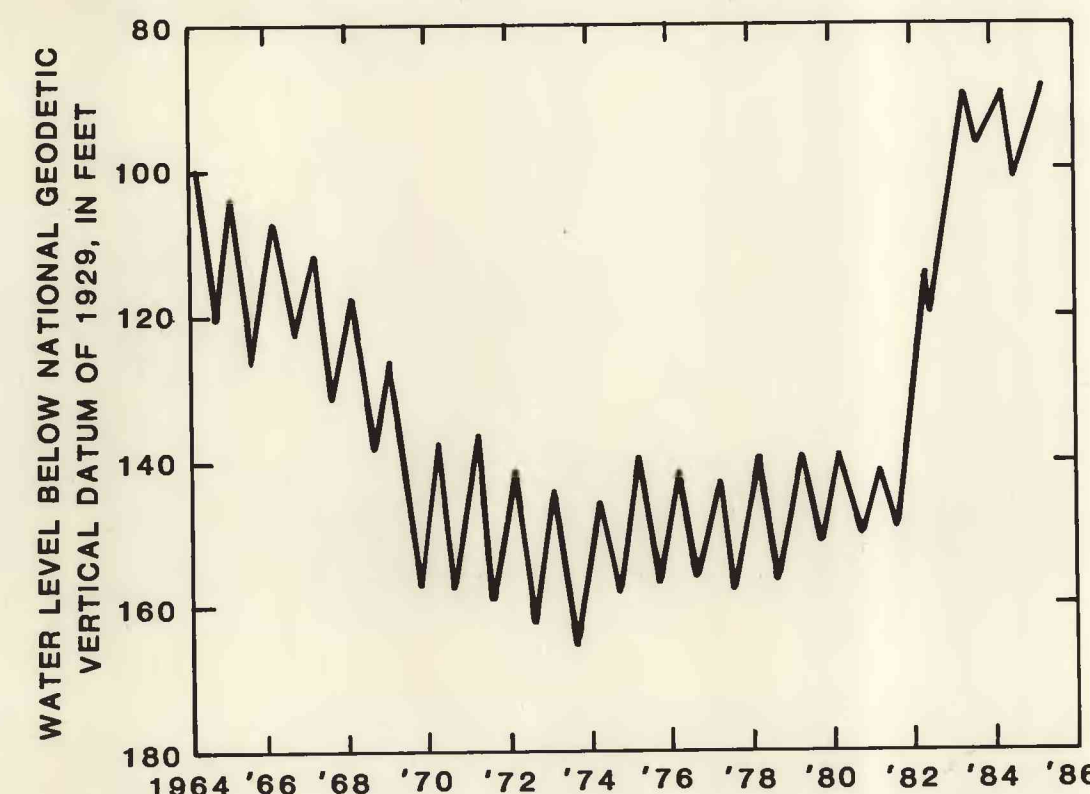


Figure 5.--Hydrograph of well Cu-445 completed in the "500-foot" sand of the Chicot aquifer.

Water-Level Change Map

A regional water-level change map (upper sand unit) and hydrographs of wells screened in the Chicot aquifer show the general trend in water levels from the spring of 1983 to the spring of 1985. To construct the map, differences in water levels measured in 1983 and 1985 were plotted, and lines of equal water-level change were drawn (fig. 3).

Water levels in the upper sand unit have shown a slow rising trend over the past several years in much of southwestern Louisiana, primarily because of a decrease in rice farming and industrial use. The slow rising trend is shown by the hydrograph of well AC-326 (fig. 4); the well is located near the center of the rice farming area (Zack, 1971). The hydrograph was constructed using the high and low water levels for the year and shows a large seasonal variation, which is caused largely by pumping for irrigation.

In the "500-foot" sand of the Lake Charles area, a significant rise in water levels occurred from 1981 to 1983, as shown by the hydrograph of well Cu-445 (fig. 5). This rise in water level was caused mainly by decreased ground-water withdrawals as a result of economic conditions and the increased use of water from the Sabine River for industry.

SELECTED REFERENCES

- Fader, S.W., 1957, An analysis of contour maps of 1955 water levels, with a discussion of salt-water problems in southwestern Louisiana: Louisiana Department of Conservation and Louisiana Department of Public Works Water Resources Pamphlet 4, 27 p.
- Harder, A.H., 1960, The geology and ground-water resources of Calcasieu Parish, Louisiana: U.S. Geological Survey Water-Supply Paper 1488, 102 p.
- Harder, A.H., Kilburn, Chabot, Whitman, H.M., and Rogers, S.M., 1967, Effects of ground-water withdrawals on water levels and salt-water encroachment in southwestern Louisiana: Louisiana Department of Conservation and Louisiana Department of Public Works Water Resources Bulletin 10, 56 p.
- Jones, P.H., 1950, Ground-water conditions in the Lake Charles area, Louisiana: U.S. Geological Survey open-file report, 17 p.
- Jones, P.H., Hendricks, E.L., Irelan, Burdge, and others, 1956, Water resources of southwestern Louisiana: U.S. Geological Survey Water-Supply Paper 1364, 460 p.
- Jones, P.H., Turcan, A.N., Jr., and Skibitzke, H.E., 1954, Geology and ground-water resources of southwestern Louisiana: Louisiana Department of Conservation Geological Bulletin 30, 285 p.
- Meyer, R.R., 1953, Summary of ground-water conditions in southwestern Louisiana: U.S. Geological Survey open-file report, 7 p.
- Nyman, D.J., 1985, The occurrence of high concentrations of chloride in the Chicot aquifer system of southwestern Louisiana: Department of Transportation and Development, Office of Public Works, Water Resources Technical Report No. 33, 75 p.
- Whitman, H.M., and Kilburn, Chabot, 1963, Ground-water conditions in southwestern Louisiana, 1961 and 1962, with a discussion of the Chicot aquifer in the coastal area: Louisiana Department of Conservation and Louisiana Department of Public Works Water Resources Pamphlet 12, 32 p.
- Zack, A.L., 1971, Ground-water pumpage and related effects, southwestern Louisiana, 1970, with a section on surface-water withdrawals: Louisiana Department of Conservation and Louisiana Department of Public Works Water Resources Pamphlet 27, 33 p.

LOUISIANA GROUND-WATER MAP NO. 1: WATER-LEVEL CHANGES OF THE CHICOT AQUIFER IN SOUTHWESTERN LOUISIANA, SPRING 1983 TO SPRING 1985

By Robert B. Fendick, Jr. and Dale J. Nyman

1987

For additional information
write to:
District Chief
U.S. Geological Survey
P.O. Box 66492
Baton Rouge, Louisiana 70896
Telephone: (504) 389-0281

Copies of this report can be
purchased from:
U.S. Geological Survey
Map Distribution
Federal Center, Bldg. 810
Box 25286
Denver, Colorado 80225